Amendments to the Drawings:

      The attached sheet of drawings includes changes to Figure 6. This sheet, which includes Figure 6, replaces the original sheet including Figure 6. In Figure 6, reference number 630, referring to the merged symbol file has been changed to "650".

Attachments: Replacement Sheet
                     Annotated Sheet Showing Changes

<center>**REMARKS/ARGUMENTS**</center>

Claims 1-13, 15-18, 20, 21 and 23 are pending in the present application. Claims 1, 5, 11-13, 15-18, 20, 21 and 23 were amended; and claims 14, 19 and 22 have been canceled. No claims have been added. Applicants believe the claims patentably distinguish over the cited art and are allowable in their present form. Reconsideration of the rejection is, accordingly, respectfully requested in view of the above amendments and the following comments.

I.   Drawing Objections

The Examiner has objected to the drawings because both the memory and the merged symbol file in Figure 6 are designated by reference number "630".

Attached hereto is a replacement sheet that includes Figure 6 in which Figure 6 has been amended to identify the merged symbol file by reference number "650". The specification has also been amended to properly refer to the new reference number. The Examiner is thanked for bringing this inadvertent error to Applicants' attention.

Therefore, the objection to the drawings has been overcome.

II.   Specification Objections

The Examiner has objected to the specification because of noted informalities on page 10. In response, the noted informalities have been corrected. No new matter has been added by any of the amendments to the specification.

Therefore, the objections to the specification have been overcome.

III.   Claim Objections

The Examiner has objected to claims 12-24 as being improperly numbered because there was no claim 11 in the application. The Examiner indicated that the claims were renumbered as claims 11-23 in the spirit of compact prosecution.

Again, the Examiner is thanked for noting this inadvertent error. The misnumbered claims have been formally renumbered herein as claims 11-23, and the claims have further been amended as necessary to ensure proper dependency.

Therefore, the objection to the claims has been overcome.

IV.   35 U.S.C. § 101

The Examiner has rejected claims 21-23 (previously numbered 22-24) under 35 U.S.C. § 101 as being directed towards non-statutory subject matter. This rejection is respectfully traversed.

> In rejecting the claims, the Examiner states:
>
> > **As to claim 21** (was 22), a "computer readable medium" is being cited, line 1 , to include transmission-type media, light waves, radio frequency etc., cited in P. 48, lines 14-24, in the specifications; the claim is directed to a computer readable medium. However, Applicant defines "computer readable medium" to include "a computer data signal embodied in a carrier wave". Signals and carrier waves do not fall within any class of statutory subject matter, and thus the claim is not limited to statutory subject matter. Please see Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility (1300 OG 142), Annex IV, Section (C) for details.
> > **As to claims 22-23** (were 23-24), they are merely further recited as computer readable medium per se, thus, do not cure the deficiency of base claim 21, and also rejected under 35 U.S.C. 101 as set forth above.

Office Action dated May 4, 2007, pages 3-4.

The Examiner asserts that claims 21-23 are not limited to tangible embodiments. No basis is present, however, for holding a computer usable medium claim non-statutory because the medium may be allegedly "intangible." The MPEP states:

> In this context, "functional descriptive material" consists of **data structures** and computer programs **which impart functionality when employed as a computer component.** (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.
> **When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized.** Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). **(emphasis added)**

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Claims 21-23 recite clearly functional descriptive material since they impart functionality when employed as a computer component. Moreover, the functional descriptive material of claims 21-23 is recorded on "some" computer-readable medium.

In the above context, the term "some" means "any" computer-readable medium. The MPEP does not draw any distinctions between one type of media that is considered to be statutory and another type of media that is considered to be non-statutory. To the contrary, the MPEP clearly states that as long as the functional descriptive material is in "some" computer-readable medium, it should be considered statutory. The only exceptions to this statement in the MPEP are functional descriptive material that does not generate a useful, concrete and tangible result, e.g., functional descriptive material composed completely of pure mathematical concepts that provide no practical result. Claims 21-23 clearly recite a useful, concrete and tangible result in that a call sequence of the computer program is generated based on symbolic data for the thread. This is not just some disembodied mathematical concept or abstract idea.

Thus, claims 21-23 are directed to functional descriptive material that provides a useful, concrete and tangible result, and which is embodied on "some" computer-readable medium. Therefore, claims 21-23 are statutory and the rejection of the claims under 35 U.S.C. § 101 has been overcome.

V.   35 U.S.C. § 102, Anticipation

The Examiner has rejected claims 1-13, 17-18, 20-21, and 23 under 35 U.S.C. § 102(e) as being anticipated by DeWitt, JR. et al., Pub. No. US 2005/0102673 A1 (hereinafter "DeWitt"). This rejection is respectfully traversed.

In rejecting the claims, the Examiner states:

> **As to claim 1,** DeWitt discloses a method. in a data processing system for autonomically determining execution flow of a computer program, comprising: providing a set of hardware registers for identifying a work area for a thread of the computer program (Fig. 6, elements of 612 - Control Bit Register, 614 - Control Register (Beginning Address), 616 - Control Register (Length); Fig. 7, element of "Set Control Registers To Point To Beginning And Length Of Work Area"), wherein the work area stores thread tracking information for the thread (Fig. 6, element 622 - processor created thread work area; [0077], Lines 3-8 - the work areas for storing of thread tracking information); copying thread tracking information from the work area to a buffer using the set of hardware registers (Fig. 3, element 304 - buffer; [0045], Lines 9-11; [0054]; (0076] - copy the contents of the work areas for certain threads of interest to the trace buffer); retrieving symbolic data for the thread ([0045], Lines 14-16 - to generate an indexed database of symbolic data for loaded modules); and generating a call sequence of the computer program based on the symbolic data for the thread (Fig. 7, element of "Write Call Stack Entry To Work Area"; Fig. 9, element of 960 - Write Call Stack Entry For CalllReturn To Designated Work Area"; [0014], Lines 4-9; [0017], Lines 4-14).

Office Action dated May 4, 2007, pages 4-5.

Claim 1, as amended herein is as follows:

> 1. A method in a data processing system for autonomically determining execution flow of a computer program, comprising:
> providing a set of hardware registers for identifying a work area for a thread of the computer program, wherein the work area stores thread tracking information for the thread;
> copying thread tracking information from the work area to a buffer using the set of hardware registers;
> retrieving symbolic data for the thread, wherein retrieving symbolic data for the thread includes retrieving symbolic data from an indexed symbolic database by searching the indexed symbolic database for symbolic data based on a process identifier for the thread; and
> generating a call sequence of the computer program based on the symbolic data for the thread.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir.1990). All limitations of the claimed invention must be considered when determining patentability. *In re Lowry*, 32 F.3d 1579, 1582, 32 U.S.P.Q.2d 1031, 1034 (Fed. Cir. 1994). Anticipation focuses on whether a claim reads on the product or process a prior art reference discloses, not on what the reference broadly teaches. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 U.S.P.Q. 781 (Fed. Cir. 1983). In this case each and every feature of the invention recited in claim 1 is not identically shown in DeWitt, arranged as they are in the claims; and accordingly, claim 1 is not anticipated by DeWitt.

Initially, Applicants respectfully disagree that DeWitt discloses or suggests "retrieving symbolic data for the thread" as was originally recited in claim 1. Paragraph [0045] of DeWitt, referred to by the Examiner as disclosing this step recites only that trace data is processed by a post-processor to generate an indexed database of symbolic data for loaded modules. The paragraph does not disclose retrieving this symbolic data for a thread as was recited in the claim. For similar reasons, DeWitt also does not disclose or suggest "generating a call sequence of the computer program based on the symbolic data for the thread as also recited in claim 1.

In order to expedite prosecution, however, claim 1 has been amended to incorporate subject matter recited in dependent claim 14 (original claim 15) that the step of retrieving symbolic data for the thread, "includes retrieving symbolic data from an indexed symbolic database by searching the indexed symbolic database for symbolic data based on a process identifier for the thread". The Examiner has acknowledged, and Applicants agree, that this subject matter is nowhere disclosed or suggested in DeWitt. Therefore, claim 1 as amended herein is not anticipated by DeWitt and withdrawal of the rejection thereunder is respectfully requested.

Independent claim 18 (original claim 19) and independent claim 21 (original claim 22) have been amended in a similar manner as claim 1 to incorporate subject matter recited in dependent claims 19 and 22 (original claims 20 and 23) and are also not anticipated by DeWitt. Claims 2-13, 20 and 23 depend from and further restrict one of independent claims 1, 18 and 21 and are also not anticipated by DeWitt, at least by virtue of their dependency.

Therefore, the rejection of claims 1-13, 17-18, 20-21, and 23 under 35 U.S.C. § 102(e) has been overcome.

VI.   35 U.S.C. § 103, Obviousness

The Examiner has rejected claims 14-16, 19, and 22 under 35 U.S.C. 103(a) as being unpatentable over DeWitt in view of Hussain et al., U.S. Patent No. 6,658,416 B1 (hereinafter "Hussain"). This rejection is respectfully traversed.

By the present Amendment, claims 14, 19 and 22 have been canceled and their subject matter incorporated into independent claims 1, 18 and 21, respectively. The Examiner has stated, and Applicants agree, that DeWitt does not disclose or suggest the subject matter that was recited in claims 14, 19 and 22. This will confirm that the present application and DeWitt were, at the time the invention was made, both owned by International Business Machines Corporation. Therefore, pursuant to 35 U.S.C. 103(c), DeWitt is not a proper reference against the present application, and the rejection of the claims as being unpatentable over DeWitt in view of Hussain is improper.

Therefore, the rejection of claims 14-16, 19, and 22 under 35 U.S.C. 103(a) has been overcome.

VII.   Conclusion

For at least all the above reasons, this application is now believed to be in condition for allowance, and it is respectfully requested that the Examiner so find and issue a Notice of Allowance in due course.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

DATE: August 3, 2007

Respectfully submitted,

/Gerald H. Glanzman/
Gerald H. Glanzman
Reg. No. 25,035
Yee & Associates, P.C.
P.O. Box 802333
Dallas, TX 75380
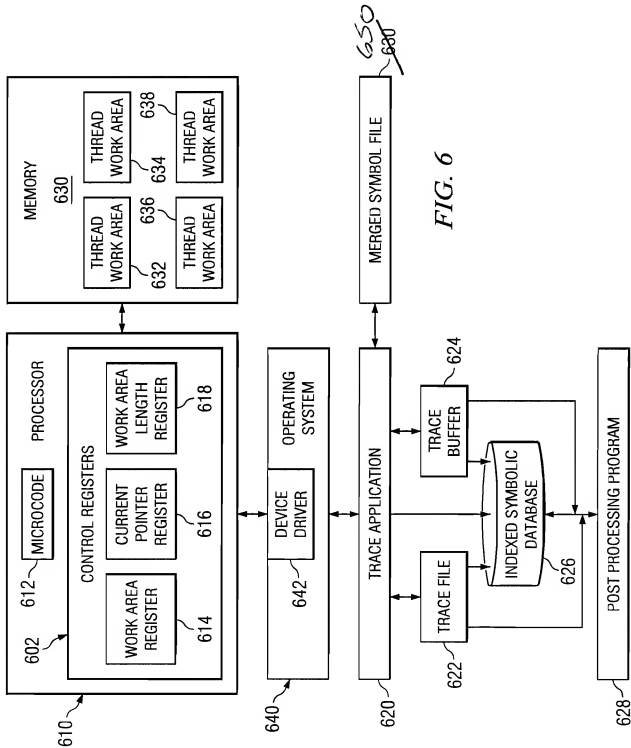(972) 385-8777
Attorney for Applicants

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DeWitt, Jr. et al.

Method and Apparatus for Determining Computer Program Flows Autonomically
Using Hardware Assisted Thread Stack Tracking and Cataloged Symbolic Data

5/8

Annotated
Sheet

FIG. 6